



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/529,530

03/29/2005

Teresa Karjala

62144B

4556

109 7590 10/03/2008

The Dow Chemical Company
Intellectual Property Section
P.O. Box 1967
Midland, MI 48641-1967

EXAMINER

MCCAIG, BRIAN A

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

10/03/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/529,530	Applicant(s) KARJALA ET AL.	
	Examiner BRIAN MCCAIG	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on March 29, 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>July 5, 2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Summary

1. This is the initial Office action based on the 10/529530 application filed March 29, 2005.
2. Claims 1-24 are pending and have been fully considered.

Specification

3. The disclosure is objected to because of the following informalities: grammatical errors. For example, page 16: "Suitable catalysts may also be selected from the metal coordination complex corresponds to the formula:" is an incomplete sentence. Additionally, immediately below the formula is written: "wherein R' each occurrence is independently. . ." The same error occurs again on the same page with respect to the explanation of R* and on pages 17, 18, 20, etc. Furthermore, it appears as though "neural" in paragraph 2 of page 16 should be "neutral." Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-5, 7-17, and 19-24 are rejected under 35 U.S.C. 102(b) as being anticipated by ROSSI ET AL (US 5811379) alone and alternatively as evidenced by TSUTSUI ET AL (US 4704491), hereafter referred to as ROSSI and TSUTSUI, respectively.
6. With respect to claims 1-5, 7-11, 13-17, and 19-23, ROSSI discloses a homogenous liquid/gel-like low molecular weight ethylene/ α -olefin polymer, which acts as a pour point reducing additive [column 31, line 63-column 32, line 1], wherein the α -olefin is comprised of ethylenically unsaturated monomers

Art Unit: 1797

including C₃-C₈ α -olefins [column 12, lines 40-59], specifically, ethylene, 1-propene, 1-butene, 1-hexene, and 1-octene having a number average molecular weight (Mn) less than 9,000 [column 3, lines 35-50], a total crystallinity less than 2% [column 19, lines 64-65], and a comonomer incorporation of greater than 50 mol % [column 16, lines 12-34]. All property characteristics as instantly claimed are therefore considered inherent to Rossi.

7. Alternatively, ROSSI does not explicitly disclose the pour point of the ethylene/ α -olefin polymers but does disclose their beneficial effects on pour points of mixtures including the said polymers. However, it is well known to one of ordinary skill in the art that low-molecular weight ethylene/ α -olefin polymers such as those of ROSSI have a pour point less than 0° C as evidenced by TSUTSUI [see, e.g., table 3, examples 6 & 7].

8. With respect to claims 12 and 24, ROSSI discloses [column 31, lines 14-16] a synthetic oil for use as a lubricant oil comprising the liquid/gel-like low molecular weight ethylene/ α -olefin polymer in which the oil has a kinematic viscosity of 2-40 centistokes at 100° C.

9. Claims 6 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by ROSSI ET AL (US 5811379) taken singly or as further evidenced by TSUTSUI ET AL (US 4704491) and WITTCOFF ET AL in *Industrial Organic Chemicals* (2nd edition, 2004, 662 pgs, WILEY), hereafter referred to as ROSSI, TSUTSUI and WITTCOFF, respectively.

10. ROSSI discloses a process comprising reacting ethylene and at least one ethylenically unsaturated monomer at a reaction temperature of at least 80° C (column 17, lines 17-24] in the absence of hydrogen [the process of ROSSI requires dilute monomers in which the diluent is a hydrocarbon inert absent hydrogen; see column 12, line 20-column 18, line 58], and in the presence of a single site catalyst [column 5, lines 32-34, which describes a late-transition-metal catalyst such as that illustrated by structure A, column 35, which is a single site catalyst as evidenced by WITTCOFF, page 498-499] to form a homogenous liquid low molecular weight ethylene/ α -olefin polymer having a number average molecular weight (Mn) less than

Art Unit: 1797

25,000 [column 3, lines 35-50], a total crystallinity less than 10% [column 19, lines 64-65], and a comonomer incorporation of greater than 15 mol % [column 16, lines 12-34]. ROSSI does not explicitly disclose the pour point of the ethylene/ α -olefin polymers but does disclose their beneficial effects on pour points of mixtures including the said polymers. However, it is well known to one of ordinary skill in the art that low-molecular weight ethylene/ α -olefin polymers such as those of ROSSI have a pour point less than 50° C as evidenced by TSUTSUI [see, e.g., table 3, examples 6 & 7].

Conclusion

11. The prior art made of record and not relied upon that is considered pertinent to applicant's disclosure includes:

- a. ROSSI ET AL (US 5705577) as it relates to the use of metallocene catalysts in the polymerization of ethylene and α -olefins,
- b. MECKING in *Angewandte Chemie International Edition* (2001, vol 40, no 3, pgs 535-540) as it relates to late transition metal single site catalysts,
- c. YOUNKIN ET AL in *Science* (2000, vol 287, pgs 460-462) as it relates to late transition metal single site catalysts, and
- d. JOHNSON et al in *Journal of the American Chemical Society* (1995, vol 117, pgs 6414-6415) as it relates to late transition metal single site catalysts.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRIAN MCCAIG whose telephone number is (571) 270-5548. The examiner can normally be reached on M-F 8-430.

13. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1797

14. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BAM

/Glenn A Caldarola/
Acting SPE of Art Unit 1797